Internship 2025- CEMEF

TITLE	**Study of post-consumer polystyrene pollutants to improve the recyclability of yogurt cups**
Key-words	Recycling, polystyrene, analytical chemistry
The global objective of work	This project aims at studying polystyrene food packaging, gathered from a sorting centre, to analyse their composition and the contaminants they contain. This will help better understand the risks linked to polystyrene recycling and eventually help to improve its recycling. Techniques used: grinding, extraction, GC-MS characterisation, NMR, use of database.
Context	With a global polystyrene production estimated around 28 million tons per year (2019), this polymer represents a key material for food material packaging mainly. This corresponds to 100000 t/a of PS plastic wastes, which includes 60000 t/a yogurt cups (Citeo – 2023). Despite the implementation of two new recycling facilities (Belgium and Spain) for 2025 to recycle French PS wastes, little information on the contamination of these packaging is available. NIAS (for Non-Intentionally-Added-Substances) correspond to polymer and additive degradation products, as well as contaminants gathered during the life of the object. These NIAS can have a detrimental impact on recycled material's properties and could be a threat to human health or the environment.
Gross monthly salary	SMIC
Project type/ cooperation	6 months internship
Skills and abilities requested	Level : Master 2 / 3^{d} year of engineering school Skills in analytical chemistry, polymer chemistry and material processing are recommended.
Location	CEMEF, MINES ParisTech, Sophia-Antipolis (06), France And Institut de Chimie de Nice, Université Côte d'Azur, Nice (06), France
CEMEF team(s)	Surfaces and Polymers (S&P)

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